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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,520	09/28/2004	Edgar Bolinth	112740-973	8816

29177 7590 08/29/2008

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EXAMINER	
PHAN, TRI H	
ART UNIT	PAPER NUMBER
2616	
MAIL DATE	DELIVERY MODE
08/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/510,520	BOLINTH ET AL.	
	Examiner	Art Unit	
	TRI H. PHAN	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 May 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *18-27 and 29-35* is/are rejected.

7)☐ Claim(s) *28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 May 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment/Arguments

1. This Office Action is in response to the Response/Amendment filed on May 22nd, 2008. Claims 1-17 are now canceled. Claims 18-35 are now pending in the application.

Priority

2. Receipt is acknowledged of certified English translation of the foreign priority application (DE 10214117.7 filed in 3/28/2002) submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings were received on May 22nd, 2008. These drawings are acceptable.

Terminal Disclaimer

4. The terminal disclaimer filed on 22 May 2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Application Number 10/556,856 filed on November 14, 2005, has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 18-26 and 29-35 are rejected under 35 U.S.C. 102(e) as being anticipated by **Larsson, Peter** (WO 02/082751; hereinafter refer as '**Larsson**').

- In regard to claims 18 and 31, **Larsson** discloses *a method for transmitting data signals in a communication system with access organized on a distributed basis to an access medium using a plurality of transmission modes* (for example see fig. 6; where, in according with IEEE 802.11, the transmission systems operate with different modes as distributed coordination 'DCF', i.e. "*distributed basis to access medium*", and point coordination function 'PCF', i.e. "*centrally organized access*" as claimed in claimed invention 31, as disclosed in page 12, lines 6-15) *by transmitting at least one pilot signal from a transmitter to a receiver* (for example see figs. 8 and 10; where in management frame, i.e. beacon signal or "*pilot signal*", is transmitted from the sending station to receiving stations as TP_Request as disclosed in page 25, lines 19-25), *the method comprising:*

calculating, by the receiver, an assignment table in respect of the transmission modes using at least one pilot signal (for example see step 706 in fig. 7; page 6, lines 10-25; where the receiving station measures power P_{RX} and interference I_{RX} of the received signal for determining transmission power P_{TX} and link adaptation LA, based on

the TP_request assigned for each corresponding element ID disclosed in management frame, i.e. " *assignment table* ", disclosed in fig. 12)*;*

transmitting the assignment table from the receiver to the transmitter (for example see step 708 in fig. 7; wherein receiving station send back information to the transmitting station as TP_Response as disclosed in page 26, lines 10-25; element ID 'y' in table 1202 of fig. 12)*; and*

transmitting the data signals using the transmission modes in accordance with the assignment table in a direction which is one of from the transmitter to the receiver and from the receiver to the transmitter (for example see steps 710-712 fig. 7; wherein data signal is transmitted to receiving station based on determining path gain and required transmit power in the receiving information element of TP_Response as disclosed in page 26, lines 10-25).

- Regarding claim 19, **Larsson** also discloses, *wherein basic transmission is specified in accordance with IEEE 802.11* (for example see fig. 7; wherein transmission is conveying based on standard IEEE 802.11 with RTS and CTS signals as disclosed in figs. 1A-D).

- In regard to claim 20, **Larsson** further discloses, *wherein at least one pilot signal is transmitted in an RTS message* (for example see step 702 in fig. 7; wherein P_{TX} (RTS) message is defined as beacon signal, e.g. P_{TX} (BEACON), for indicating the setting transmission power level as disclosed in page 23, lines 4-9).

- Regarding claims 21-24 and 33, **Larsson** further discloses, *wherein the assignment table includes at least one of a bit loading table for adaptive modulation and expansion data for expansions of a physical layer which extend beyond Standard IEEE 802.11a* (for example see page 7, lines 2-5; wherein far reaching transmit power control 'TCP' and link adaptation approach improves feasible extent in IEEE 802.11a defined in page 1, lines 19-24); *where the request is made in an RTS message* or *in a CTS message* (for example see TP_Request, i.e. RTS message, for element ID 'x' and TP_Reply, i.e. CTS message, for element ID 'y' in table 1202 of fig. 12, i.e. "*assignment table*"; page 17, lines 11-19).

- In regard to claims 25-26, **Larsson** further discloses, *wherein the communication terminal includes both transmitter and receiver functionality* (for example see fig. 7; wherein, it is inherent that 'transmitter and receiver functionality' are included in the transmitting station 'T' and receiving station 'R' in order to transmit/receive corresponding signals such as RTS, CTS, DATA, ACK) *and the assignment table is transmitted in a direction which is one of from the transmitter to the receiver and from the receiver to the transmitter* (for example see fig. 12; wherein information element of the management frame, e.g. "*assignment table*", such as TP_Request IE for element ID 'x' and TP_Reply IE for element ID 'y' are transmitting/receiving corresponding to the element ID; where, in figure 12, page 27, lines 10-18, element ID 'x' is the transmitter for transmitting the TP_Request and element ID 'y' is the receiver)*; and wherein the*

assignment table is employed in the transmitted data signals (for example see steps 710-712 in fig. 7; where the transmission power P_{TX} and link adaptation LA are determined to convey data for corresponding element ID in management frame).

- Regarding claims 29-30 and 34-35, **Larsson** further discloses, *wherein the communication system is a CSMA system according to Standard IEEE 802.11* (for example see page 3, lines 1-19) or *wherein the transmission modes are at least partly a result of an adaptive modulation* (wherein the code rates and signal constellations, i.e. "*adaptive modulation*", are varying depending on the channel quality in different modes as disclosed in page 1, line 19 through page 2, line 8).

- In regard to claim 32, Larsson further discloses, *wherein the data to be transmitted is modulated with a fixed modulation scheme provided there is no assignment table present in respect of the transmission modes* (for example see step 702 in fig. 7; page 7, lines 12-24; wherein RTS frame are initially transmitted with predetermined transmit power, i.e. "*fixed modulation scheme*", with no adjust transmission power and link adaptation, i.e. "*no assignment table present*", to receiving stations).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Larsson, Peter** (WO 02/082751).

- In regard to claim 27, **Larsson** fails to explicitly disclose *wherein at least one data symbol which consists of 24 bits is used for transmission of the assignment table.* However, **Larsson** does discloses different frame structure formats for conveying transmission power control TPC and link adaptation LA, i.e. "*assignment table*", in byte or octet as disclosed in figs. 15-17; and other different frame formats can be used as disclosed in page 33, lines 20-27.

Therefore, it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to use the structure format with symbol consisting of 24 bits, for transmission the assignment table in **Larsson**'s system as designed choice for specific environments.

Response to Arguments

9. Applicant's arguments filed on May 22nd, 2008 have been fully considered but they are not persuasive.

In the REMARKS, pages 7-8, Applicant mainly argues that the "beacon" of Larsson's reference (WO 02/082751) is not as the "pilot signal" recited in independent claims 18 and 31. Examiner respectfully disagrees. In general, it is well recognized that

the "beacon" and "pilot signal" are interchangeable terms in wireless system as disclosed by the following prior arts (see attached):

- **Leung, Gilbert** (US 6,452,917) - entire document, particularly in col. 1, lines 33-39.

- **Kim, Dongwoo** ("Forward Link Power Allocation for IS-95 Based CDMA Mobile Systems", IEEE 1999, 0-7803-5284, pages 1126-1130) - entire document, particularly in page 1126, section II The forward Link Channels, lines 1-3.

Perhaps applicant refers to certain features that are disclosed in the present application but not recited in the rejected claims in making the contention that the Larsson's beacon is not as "pilot signal" of independent claims 18 and 31 of applicant's invention. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

Further, Applicant asserts that Larsson fails to disclose "*transmitting at least one pilot signal from a transmitter to a receiver, the method comprising: calculating, by the receiver, an assignment table in respect of the transmission modes using at least one pilot signal;*" as recited in independent claims 18 and 31. However, as cited by the examiner in the previous Office action and further herein, Larsson teaches, in figs. 8 and 10, where in management frame, i.e. beacon signal or "*pilot signal*", is transmitted from the sending station ("*transmitter*") to other receiving stations ("*receiver*") as TP_Request as disclosed in page 25, lines 19-25; and, in step 706 of figs. 7, 8, where the receiving station measures power P_{RX} and interference I_{RX} of the received signal for determining transmission power P_{TX} and link adaptation LA, based on the TP_request

assigned for each corresponding element ID disclosed in management frame, i.e. "*assignment table*", (see fig. 12).

Claims 19-27, 29-30, and 32-35 are rejected as in the previous Office action and further herein (see Part 6 and 8 above of this Office action) and by virtue of their dependence from claims 18 and 31.

In view of the reasons provided above, the examiner concludes that Larsson teaches the arguable features and believes that the rejections are proper as set forth.

Allowable Subject Matter

10. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Leung, Gilbert (U.S.6,452,917) and **Kim, Dongwoo** ("Forward Link Power Allocation for IS-95 Based CDMA Mobile Systems", IEEE 1999, 0-7803-5284, pages 1126-1130) are all cited to show devices and methods for improving data transmission on carrier channel in wireless communication architectures, which are considered pertinent to the claimed invention.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Chi H Pham/

Supervisory Patent Examiner, Art Unit 2616

8/29/08

/Tri H. Phan/
Examiner, Art Unit 2616
August 29, 2008